From December 2001 through January 2002, the Fish and Wildlife Service published the following proposed and final Endangered Species Act (ESA) rulemakings in the *Federal Register*.

Emergency Listing

Tumbling Creek Cavesnail *(Antrobia culveri)* On December 27, under the emergency provisions of the ESA, we gave immediate protection to the Tumbling Creek cavesnail, a unique aquatic snail found only in one cave stream in southwest Missouri. The Tumbling Creek cavesnail's population has declined significantly in recent years, and biologists believe that the species may face imminent extinction. Our action places the cavesnail on the endangered species list for 240 days. During this time, we will evaluate a proposed listing rule, which we also published on December 27; if approved, it would give the species long-term protection under the standard provisions of the ESA.

The Tumbling Creek cavesnail measures only about one-tenth of an inch (2.5 millimeters), is white, and is blind. Tumbling Creek Cave supports a high diversity of species. Several species of invertebrates, previously unknown, have been discovered there, and the cave also hosts colonies of gray bats *(Myotis grisescens)* and Indiana bats *(Myotis sodalis)*, both of which are already listed as endangered. The cave itself is privately owned, while the land in the surrounding watershed is in both public and private ownership.

Biologists monitoring cavesnail populations in Tumbling Creek Cave over recent years have noted a sharp decline. The specific cause is unknown, but biologists believe that deteriorated water quality is a likely cause. Species such as the cavesnail that depend on underground water systems are highly vulnerable to changes in water quality and quantity. These underground systems are recharged by water filtering down from the surface, and land-use activities on the surface can affect water quality below. Water entering Tumbling Creek Cave from the land surface around the cave may contain silt or pollutants.

Proposed Listing Rules

Island Fox *(Urocyon littoralis)* Four rare subspecies of the tiny, docile island fox inhabiting four of the Channel Islands off of the southern California coast may receive ESA protection. On December 10, we proposed to list the Santa Cruz Island fox *(U. l. santacruzae)*, Santa Rosa Island fox *(U. l. santarosae)*, San Miguel Island fox *(U. l. littoralis)*, and Santa Catalina Island fox *(U. l. catalinae)* as endangered.

Fox populations on each of the islands, including the three within Channel Islands National Park, have dropped dramatically since 1995. On Santa Cruz Island, the population decreased from 1,300 to fewer than 100 animals. Island foxes on San Miguel and Santa Rosa islands no longer exist in the wild, and captive breeding programs are underway on both islands. Fewer than 200 foxes occur in the wild on Santa Catalina Island and the fox is being bred in captivity. Based on studies conducted as recently as 1999, the four subspecies of Channel Island foxes have a 50 percent chance of extinction over the next five to 10 years.

The primary causes of the decline of these island fox subspecies are predation by golden eagles *(Aquila chrysaetos)*, the rapid spread of canine distemper through the Santa Catalina island subspecies, and habitat degradation caused by the introduction of sheep, goats, rabbits, deer, elk, cattle, pigs, and horses.

Biologists speculate that island foxes, which are smaller than house cats, may have gotten to the islands more than 18,000 years ago by floating on debris from the mainland during a storm, earthquake, or other natural event. At that time, when ocean levels were lower, the foxes inhabited one land mass called Santarosae that consisted of what later became San Miguel, Santa Rosa, and Santa Cruz islands. As sea levels rose and the northern Channel Islands separated, each fox population became genetically distinct. Foxes arrived between 2,200 to 3,800 years ago on the southern Channel Islands of Catalina, San Clemente, and San Nicolas, and were likely introduced by Native Americans, who may have kept them as pets.

Island fox
Photo © B. Moose Peterson/WRP

Island foxes are inquisitive and generally show little fear of humans. They are grayish-white and black on the back and dull white on the underbelly. The base of the ears and sides of the neck and limbs are cinnamon-rust colored. As opportunistic foragers, island foxes — the largest native carnivore on the islands — will eat a wide variety of plants and small animals. They live in a wide variety of island habitats. When a female is ready to give birth in the spring, she will find a rock crevice or hollow stump and deliver from one to five pups, which are cared for by both the male and female for several months.

In October 2001, we awarded $504,000 in grants to the state of California to develop and put into effect a Candidate Conservation Agreement for the Santa Cruz Island fox. This grant will fund recovery actions for the fox that are identified in the state's draft recovery plan for the species. These actions include relocating golden eagles from Santa Cruz Island back to the mainland, undertaking captive breeding of the foxes, monitoring, and tracking causes of mortality. We also provided a $10,800 grant to fund the development and initial implementation of a Candidate Conservation Agreement for the Santa Catalina Island fox and the island loggerhead shrike.

In addition, we are working in partnership with The Nature Conservancy and the Santa Cruz Predatory Bird Research Group, with a Landowner Incentives Program grant and matching funds from the Conservancy, to provide financial assistance to private property owners who are willing to conserve listed and proposed species. This money has helped fund the removal of golden eagles from the island. We are also investigating the feasibility of reintroducing bald eagles

(Haliaeetus leucocephalus), which historically nested on the islands. Bald eagles are territorial and, if reestablished, could keep golden eagles away from the islands. Bald eagles feed primarily on marine mammals and fish and would not be a threat to the foxes. The bald eagle population on the islands was eliminated by DDT poisoning in the early 1960s.

Proposed Delisting Rule

Two Guam Birds On January 25, we proposed to remove two birds native to the Mariana Islands of the western Pacific Ocean from the list of threatened and endangered species, the Mariana mallard *(Anas platyrynchos oustaleti)* and the Guam broadbill *(Myiagra freycineti)*. Both species are now believed to be extinct.

Mariana mallard
Photo by Eugene Kridler/USFWS

The Mariana mallard was known only from the islands of Guam, Tinian, and Saipan. It was probably never abundant due to limited habitat availability; there have never been extensive freshwater marshes or swamps in the Mariana Archipelago. The last confirmed sighting of a Mariana mallard was in 1979. Its reduction in range and eventual extinction has been attributed to habitat loss and hunting, especially during, and immediately after, World War II. After intensive and systematic searches carried out from 1983 through 1989, investigators concluded that the Mariana mallard was extinct.

Like the Mariana mallard, the Guam broadbill also was probably never abundant. As its name indicates, it was endemic to the island of Guam. By the time the Guam broadbill was listed as endangered in 1984, its population was already critically low. In fact, there have been no confirmed sightings of this bird since 1984. The main cause for its decline was predation by the nonnative brown tree snake *(Boiga irregularis)*, which was accidentally introduced to Guam shortly after World War II. This voracious predator has decimated Guam's other native forest birds. The Guam broadbill was presumed by 1985 to be extinct.

Final Listing Rules

Golden Sedge *(Carex lutea)* On January 23, we listed the golden sedge, a perennial in the family Cyperaceae, as an endangered species. This plant has yellowish green, grass-like leaves, and its fertile stems may reach three feet (0.9 meter) or more in height and produce many yellow flowers. Biologists have located only eight populations within coastal savannas in Onslow and Pender counties, North Carolina. Most are small, with three populations composed of fewer than 50 individual plants.

Little of the species' coastal plain habitat remains. Historically, wildfires controlled undergrowth and kept coastal grasslands and surrounding longleaf pine forests relatively open. These fires are suppressed now, making the habitat less favorable for the golden sedge and numerous other species of plants and animals. Drainage ditching, mining, bulldozing, and road-building also have harmed the species in the past, and they continue to pose a threat. Logging, if done with care, does not harm the plants.

Mississippi Gopher Frog *(Rana capito sevosa)* We gave final protection to the Mississippi gopher frog on December 4 by listing it as an endangered species. Found only at a single site in Mississippi, the Mississippi gopher frog is a distinct population segment of the wider-ranging gopher frog. The Mississippi gopher frog has genetic characteristics that are distinct from those of all other gopher frogs, and is isolated from other populations by 125 miles (200 km) of unoccupied habitat and the Mobile River delta.

Mississippi gopher frog
USFWS photo

The Mississippi gopher frog formerly occurred in the once extensive longleaf pine forests of the lower coastal plain from east of the Mississippi River in Louisiana to the Mobile River delta in Alabama. Today, only about 100 adult frogs remain, all located at one site in the DeSoto National Forest in Harrison County, Mississippi. Biologists believe loss and degradation of habitat is the primary reason the species has declined. Because of the small number of remaining frogs, the population is extremely vulnerable to extinction from natural processes such as drought and floods, and to any additional loss, damage, and fragmentation of its habitat.

Final Reclassification

Large-flowered Skullcap *(Scutellaria montana)* On January 14, we reclassified the large-flowered skullcap, a plant from Georgia and Tennessee, from endangered to the less critical category of threatened.

The skullcap was listed as endangered in 1986. Its upgrade to threatened status is a result of dedicated work by partners including natural resource agencies in Tennessee and Georgia, the Tennessee River Gorge Trust, the University of Tennessee, the Tennessee Aquarium, and the Tennessee Valley Authority. Since 1986, many federal and state agencies and private organizations have searched for, and protected, populations of this plant. The Tennessee Valley Authority annually surveys known populations and conducts searches for additional populations. The National Park Service also monitors populations on its lands. Both the Tennessee and Georgia Natural Heritage

Inventories have conducted surveys that discovered new populations. The Tennessee River Gorge Trust now owns and protects some of the largest populations.

The large-flowered skullcap is a perennial herb that produces a blue and white flower. It is found on rocky, dry slopes, ravines, and stream bottom forests in the Cumberland Plateau of northwestern Georgia and adjacent southeastern Tennessee. The biggest threat to the species continues to be habitat loss and alteration. We will work with our partners to manage known populations and seek new ones.

Large-flowered skullcap
USFWS photo

Critical Habitat Rules

Critical habitat, as defined in the ESA, is a term for a geographic area that is essential for the conservation of a listed species. Critical habitat designations do not establish a wildlife refuge, wilderness area, or any other type of conservation reserve, nor do they affect actions of a purely private nature. They are intended to delineate areas in which federal agencies must consult with the Service to ensure that actions these agencies authorize, fund, or carry out do not adversely modify the designated critical habitat. Within designated critical habitat boundaries, federal agencies are required to consult except in areas that are specifically excluded, such as developed areas within the boundaries that no longer contain suitable habitat. Maps and more specific information on critical habitats are contained in the specific *Federal Register* notice designating each area. For more information on critical habitat designations in general, go to the website for our Endangered Species Listing Program (http://endangered.fws.gov/listing/index.html) and click on "About Critical Habitat."

Newcomb's Snail *(Erinna newcombi)* We proposed on January 28 to designate segments of nine streams and tributaries on the Hawaiian island of Kaua'i as critical habitat for the Newcomb's snail, a freshwater snail listed as a threatened species. The segments proposed for protection total 16.3 miles (26.3 km) in length and are located at mid-elevation valleys in relatively remote areas. The proposed critical habitat areas are found largely on state land already managed for conservation purposes.

Although biologists estimate that between 6,000 and 7,000 Newcomb's snails exist on Kaua'i, more than 90 percent of the snails are found in two populations in small areas along the Kalalau Stream and Lumahai River. This makes these animals very susceptible to catastrophic events such as hurricanes, landslides, and invasions of nonnative predators, including snails, flies, fish, and frogs. Habitat loss and degradation through water diversion and well drilling are suspected to have caused the historical decline of the snail.

Newcomb's snail critical habitat
USFWS photo

O'ahu 'Elepaio *(Chasiempis sandwhichensis ibidis)* On December 10, we designated approximately 65,880 acres (26,660 ha) of critical habitat on the Hawaiian island of O'ahu for the endangered O'ahu 'elepaio, a forest bird once considered the most common native land bird on the island. The five designated areas are concentrated in the Wai'anae and Ko'olau mountains.

O'ahu 'elepaio critical habitat.
USFWS photo

Today, an estimated 1,982 O'ahu 'elepaios exist in scattered locations, with their current range less than 4 percent of their original range. The five critical habitat units include almost all of the currently occupied land and enough unoccupied historical habitat to support a self-sustaining population. The designated areas approximate the species' distribution in 1975, when extensive surveys showed that 'elepaio populations were larger and less isolated.

BOX SCORE

Listings and Recovery Plans as of August 31, 2002

GROUP	ENDANGERED U.S.	ENDANGERED FOREIGN	THREATENED U.S.	THREATENED FOREIGN	TOTAL LISTINGS	U.S. SPECIES W/ PLANS
MAMMALS	65	251	9	17	342	53
BIRDS	78	175	14	6	273	75
REPTILES	14	64	22	15	115	32
AMPHIBIANS	12	8	9	1	30	13
FISHES	71	11	44	0	126	94
SNAILS	21	1	11	0	33	21
CLAMS	62	2	8	0	72	56
CRUSTACEANS	18	0	3	0	21	12
INSECTS	35	4	9	0	48	29
ARACHNIDS	12	0	0	0	12	5
ANIMAL SUBTOTAL	388	516	129	39	1,072	390
FLOWERING PLANTS	569	1	144	0	714	566
CONIFERS	2	0	1	2	5	2
FERNS AND OTHERS	26	0	2	0	28	28
PLANT SUBTOTAL	597	1	147	2	747	596
GRAND TOTAL	985	517	276	41	1,819*	986

TOTAL U.S. ENDANGERED: 985 (388 animals, 597 plants)
TOTAL U.S. THREATENED: 276 (129 animals, 147 plants)
TOTAL U.S. LISTED: 1,261 (517 animals**, 744 plants)

* Separate populations of a species listed both as Endangered and Threatened are tallied once, for the endangered population only. Those species are the argali, chimpanzee, leopard, Stellar sea lion, gray wolf, piping plover, roseate tern, green sea turtle, saltwater crocodile, and olive ridley sea turtle. For the purposes of the Endangered Species Act, the term "species" can mean a species, subspecies, or distinct vertebrate population. Several entries also represent entire genera or even families.

** Nine animal species have dual status in the U.S.

ENDANGERED Species BULLETIN

U.S. Department of the Interior
Fish and Wildlife Service
Washington, D.C. 20240